

Serial No. 10/824,023

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re **PATENT** application of:

Applicant: Masahiro NISHIO *et al.*

Serial No.: 10/824,023

Art Unit: 1792

Filed: April 14, 2004

Title: **WASHING MACHINE CAPABLE OF DETECTING LEAKAGE OF
WATER FEED UNIT**

Examiner: Samuel A. Waldbaum

Docket No.: FUKAP0100US

APPEAL BRIEF

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Sir:

This brief is submitted in connection with the appeal of the above-identified application. Credit card payment of the fee set forth in 37 C.F.R. § 41.20(b)(2) is made in connection herewith. If there are any additional fees resulting from this communication, please charge the same to our Deposit Account No. 18-0988, our Docket No. FUKAP0100US.

I. Real Party in Interest

The real party in interest in the present appeal is Sharp Kabushiki Kaisha, assignee of the present application.

II. Related Appeals and Interferences

Appellants, Appellants' undersigned representative, and/or the assignee of the present application are unaware of any prior or pending appeals, interferences or judicial proceedings which may be related to, directly affect or be directly affected by, or have bearing on the Board's decision in the pending appeal.

III. Status of Claims

Claims 1, 3, 5-8, and 10-14 are in the instant proceeding and are pending in the application. Claims 1, 3, 5-8, and 10-14 stand finally rejected and are the subject of this appeal. Claims 2, 4, and 9 have been previously canceled.

IV. Status of Amendments

No amendments to the claims or the specification have been made subsequent to the final rejection contained in the Final Office Action dated August 25, 2008.

V. Summary of the Claimed Subject Matter

Independent claim 1 recites a washing machine, including a drum having an axis of rotation in a direction crossing a vertical direction (page 8, lines 7-8) and a water tank surrounding said drum (page 8, lines 7-8), comprising a water level detecting unit detecting level of water in said water tank (page 9, lines 11-19); a water feed unit for feeding water to said water tank (page 9, lines 2-5); and a control portion operating said washing machine for performing a wash cycle including washing, rinsing, and draining (page 10, lines 10-13; page 11, line 10 to page 13, lines 24; Fig. 7); said control portion being configured to recognize when said wash cycle is completed and upon such recognition, to cause said water level detecting unit to detect water level in said water tank (page 13, line 25 to page 14, line 1) only for a prescribed time period substantially

equaling a smallest amount of water detectable by said water level detecting unit divided by a minimum flow rate of water fed from said water feed (page 14, lines 4-26), and thereafter power supply to said control portion is turned off (page 14, lines 2-3). (See generally Figs. 1-4 and 7.)

Independent claim 3 recites a washing machine, including a drum having an axis of rotation in a direction crossing a vertical direction (page 8, lines 7-8) and a water tank surrounding said drum; wherein said water tank has an opening in a plane crossing said axis of rotation (page 8, lines 7-8); said washing machine comprising a door opening and closing said opening of said water tank (page 8, lines 20-24); a water leakage detecting unit monitoring water leakage at said water feed unit and detecting the water level in said water tank (page 9, lines 11-19); and a control portion operating said washing machine for performing a wash cycle including washing, rinsing, and draining (page 10, lines 10-13; page 11, line 10 to page 13, lines 24; Fig. 7); said control portion being configured to recognize when said wash cycle is completed and upon such recognition to cause said leakage detecting unit to monitor water leakage at said water feed unit (page 13, line 25 to page 14, line 1) only for a prescribed time period substantially equaling a smallest amount of water detectable by said water level detecting unit divided by a minimum flow rate of water fed from said water feed unit (page 14, lines 4-26), and thereafter power supply to said control portion is turned off (page 14, lines 2-3). (See generally Figs. 1-4 and 7.)

Dependent claim 5 recites the washing machine according to claim 3, further comprising a lock unit for preventing opening of said door (page 8, lines 24-29); said control portion being further configured to cause said lock unit to lock said door when said leakage detecting unit detects water leakage at said water feed unit (page 14, lines 1-2).

Dependent claim 6 recites the washing machine according to claim 5, further comprising a drainage unit draining water in said water tank (page 9, lines 5-8); and a lock detecting unit detecting whether said door is locked by said lock unit or not (page

15, lines 15-18); wherein when said water leakage detecting unit detects a water leakage at said water feed unit, said lock unit is activated not to open said door and said lock detecting unit detects that said door is not locked (page 15, lines 1-15 and 18-20), said control portion being further configured to cause said drainage unit to drain off the water in said water tank (page 15, line 27 to page 16, line 2).

Dependent claim 7 recites the washing machine according to claim 6, said control portion being further configured, when said lock unit is caused to lock said door and said lock detecting unit detects that said door is not locked, to notify that said door is not locked (page 15, lines 20-26).

Independent claim 8 recites a washing machine including a drum having an axis of rotation in a direction crossing a vertical direction (page 8, lines 7-8) and a water tank surrounding said drum (page 8, lines 7-8); wherein said water tank has an opening in a plane crossing said axis of rotation (page 8, lines 20-24); said washing machine comprising a water level detecting unit detecting water level in said water tank (page 9, lines 11-19); a lock unit for locking said door (page 8, lines 24-29); a water feed unit for feeding water to said water tank (page 9, lines 2-5); and a control portion operating said washing machine for performing a wash cycle including washing, rinsing, and draining (page 10, lines 10-13; page 11, line 10 to page 13, lines 24; Fig. 7); said control portion being configured to recognize when said wash cycle is completed, and upon such recognition to cause said water level detecting unit to detect water level in said water tank (page 13, line 25 to page 14, line 1) only for a prescribed time period substantially equaling at least a smallest amount of water detectable by said water level detecting unit divided by a minimum flow rate of water fed from said water feed unit (page 14, lines 4-26), and when said water level detecting unit detects a water level not lower than a first water level as said lowest water level detectable by said water level detecting unit, causes said lock unit to lock said door (page 15, lines 1-15 and 18-20), and when said water level detecting unit does not detect a water level not lower than said first water level, power supply to said control portion is turned off (page 14, lines 2-3). (See

generally Figs. 1-4 and 7.)

Dependent claim 10 recites the washing machine according to claim 8, said control portion being further configured, when said wash cycle is completed, to cause said lock unit to unlock said door (page 13, lines 21-24).

Dependent claim 11 recites the washing machine according to claim 8, further comprising a drainage unit draining water in said water tank (page 9, lines 5-8); and a lock detecting unit detecting whether said door is locked by said lock unit or not (page 15, lines 15-18); wherein when said water level detecting unit detects a water level not lower than said first water level after the completion of said operation for washing and said lock detecting unit detects that said door is not locked by said lock unit (page 15, lines 1-15 and 18-20), said control portion being further configured to cause said drainage unit to drain off the water in said water tank (page 15, line 27 to page 16, line 2).

Dependent claim 12 recites the washing machine according to claim 11, said control portion being further configured, when said lock unit is caused to lock said door and said lock detecting unit detects that said door is not locked, to notify that said door is not locked (page 15, lines 20-26).

Dependent claim 13 recites the washing machine according to claim 8, further comprising a drainage unit for draining off the water in said water tank (page 9, lines 5-8); said control portion being further configured, after completion of said wash cycle, when said water level detecting unit detects a water level not lower than a second water level higher than said first water level, to cause said drainage unit to drain off the water in said water tank (page 16, lines 5-9 and 12-18; Figs. 9-10).

Dependent claim 14 recites the washing machine according to claim 13, wherein said second water level is positioned lower than a lowermost plane of said opening of said water tank (page 16, lines 10-11; Fig. 10).

VI. Grounds of Rejection to be Reviewed on Appeal

Claims 1 and 3 stand rejected under 35 U.S.C. §103(a) as being obvious based on the combination of Totterdell, European Patent Application 0 028 067 (Totterdell), and Ohsugi et al., U.S. Patent No. 4,955,213 (Ohsugi). Claims 5, 8, and 10 stand rejected pursuant to 35 U.S.C. § 103(a) as being obvious over Totterdell and Ohsugi, and further in view of Dimberger et al., U.S. Patent No. 6,840,553 (Dimberger). Claims 6 and 7 stand rejected pursuant to 35 U.S.C. § 103(a) as being obvious over Totterdell in view of Ohsugi and Dimberger as applied to claim 5, and further in view of Baubin, U.S. Patent No. 4,696,171 (Baubin) and Nakamura et al., U.S. Patent No. 5,000,015 (Nakamura). Claims 11-13 stand rejected under 35 U.S.C. §103(a) as being obvious over Totterdell, Ohsugi, and Dimberger as applied to claim 8, and further in view of Nakamura. Claim 14 stands rejected pursuant to 35 U.S.C. § 103(a) as being obvious over Totterdell, Ohsugi, Dimberger, and Nakamura, and further in view of Kronbetter et al., U.S. Patent No. 6,256,823 (Kronbetter).

VII. Argument

A. Introduction – The Controller Configuration Has Patentable Weight

The claimed invention includes a “control portion being configured” in a particular manner. This lengthy prosecution history boils down to the Examiner’s premise – ***incorrectly*** – that the configuration of an electronic controller is not structural. Once the configuration of the control portion is afforded its proper weight, the claims are patentable.

As an example of the Examiner’s position, in the Response to Arguments section of the Final Office Action, the Examiner characterizes the claimed invention as a “method of operations of the controller during use of the washing machine.”¹ The Examiner concludes that the claimed method of operations does not provide structural

¹ There actually have been two Examiners in this case, but because their positions have been comparable, Appellants refer to “the Examiner” for simplicity rather than parceling out the precise statements of each.

limitations for an apparatus claim. The Examiner then quotes MPEP § 2114, regarding the use of functional language in apparatus claims. Beyond such quotation, the Examiner does not explain why the configuration of an electronic controller is not structural. (See Final Office Action at pages 13-14.) Appellants submit that the Examiner has misapplied MPEP § 2114, insofar as the claimed configuration of the control portion is indeed structural, and not functional as concluded by the Examiner.

In fact, it was the **Examiner** who suggested that “configured” language be added to the claims to replace a more functional “wherein” recitation regarding the nature of the control portion. (See Advisory Action dated December 21, 2007, page 2.) Appellants did so, and further amended the claims in various responses to clarify the precise configuration of the control portion. Despite the various amendments, the Examiner has never deviated from the basic position that the configuration of an electronic controller is not structural. In other words, any electronic controller (computer, microprocessor, software controller, etc.) reads on any other controller **regardless of how such controllers are configured**.

The Examiner is simply incorrect, and the Examiner’s position is contrary to conventional claiming of devices that are operated under the control of a computer, microprocessor, or comparable electronic control device. It is well recognized that an electronic controller “configured to” operate in a particular manner is structurally defined by the configuration. *Collaboration Properties, Inc. v. Tandberg ASA*, 81 U.S.P.Q.2d 1530, 1536 (N.D. Cal. 2006). Thus, a programmed machine is structurally different from a machine without that program. *In re Noll*, 191 U.S.P.Q. 721, 727 (C.C.P.A. 1976). “[P]rogramming creates a new machine, because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from the program software. *In re Alappat*, 33 F.3d 1526, 1545, 31 U.S.P.Q.2d 1545 (Fed. Cir. 1994), *overruled on other grounds*, *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008), *citing*, *Noll, supra*. A programmed device becomes a “specific electrical circuit with or without electro-mechanical

components". *In re Prater*, 162 U.S.P.Q. 541, 549-50 n. 29 (C.C.P.A. 1969).

This case law demonstrates that an electronic control portion programmed or "configured to" operate in specific manner is structurally distinct from an electronic control portion configured to operate differently. Accordingly, the rejections based on the purported non-structural nature of the control portion are deficient, and the configuration of the control portion is entitled to patentable weight. Once the claimed control portion configuration is afforded its proper weight, the claimed invention is patentable over the prior art.

B. Overview of the Claim Language and Prosecution History

In summary, independent claims 1, 3, and 8 each recite at least the following two features. First, the claims recite a specific configuration of the control portion to clarify its structural nature in response to the Examiner's comments that the features of the control portion are not structural. Second, the claims recite a specific calculation of the claimed "prescribed time period". The prescribed time period is set in this manner so as to minimize the time period of the water level detection, thereby saving power. As further explained below, these features are not disclosed by the cited references.

As background, on January 30, 2008, Appellants filed an RCE containing claim amendments. In the prior Advisory Action, the Examiner had commented that "configured" language was not used in connection with the control portion, suggesting that she regarded the aspects of the control portion as functional, not structural. Appellants, therefore, amended the claims in the RCE to recite "configured" language more explicitly. In addition, the previous version of the claims referred only to water level detection "when said washing is completed". In the Advisory Action, the Examiner interpreted "washing" to exclude other portions of a wash cycle (e.g., rinsing and draining), contrary to the manner in which the term is used in the application. Appellants, therefore, also amended the claims to recite that water level detection occurs after the entire wash cycle is completed (including rinsing and draining).

On February 29, 2008, the Examiner participated in a telephone interview to discuss the claims as submitted in the RCE. The Examiner indicated, however, that she still regarded the claims as not being patentable over the cited prior art. As the discussions proceeded, it became apparent that the Examiner was still affording limited patentable weight to manner in which the control portion was claimed. More specifically, the Examiner seemed not to be affording patentable weight to the precise configuration of the control portion as recited in the claims. In addition, the Examiner felt that the "prescribed time period" was being recited too broadly, and may have more patentable weight if narrowed to a more specific mathematical operation or formula.

In accordance with the Examiner's comments (although Appellants recognize that the Examiner did not commit to favorable consideration of particular claim language), independent claims 1, 3, and 8 were amended. First, the claims recite the structural nature and configuration of the control portion. Specifically, the claims recite: "said control portion being configured to recognize when said wash cycle is completed, and upon such recognition to cause said water level detecting unit to detect water level in said water tank only for a prescribed time period. . . ." Because the claimed control portion has a particular configuration, it is structurally different from other controllers having different configurations, such as the controllers described in the references.

In addition, the independent claims recite a particular manner by which the claimed "prescribed time period" is determined. Specifically, these claims recite: "a prescribed time period substantially equaling a smallest amount of water detectable by said water level detecting unit divided by a minimum flow rate of water fed from said water feed unit. . . ." By "substantially equaling" a smallest amount of water detectable divided by a minimum flow rate, Appellants refer to minor adjustments that may be made for component variations, as described in the specification. For instance, the specification describes an example in which the minimum flow rate is 0.3 L/min and the smallest detectable water level is 3L, resulting in a calculated prescribed time period of 10 min. (Specification at page 14, lines 13-17.) This calculated prescribed time period

may be adjusted to 15 min to account for component variations to ensure proper monitoring. (Specification at page 14, lines 18-19.)

In the various Office Actions, including the Final and Advisory Office Actions, the Examiner essentially has taken the position that a generic controller discloses the features of the claimed controller merely because any controller is “capable” of being configured as claimed. (See, e.g., Final Office Action at paragraphs 5-7; page 10 lines, 4-7; page 11, lines 13-21; page 13, paragraph 9.) As demonstrated by the case law of the previous section, this analysis is misplaced. The Examiner’s position is analogous to saying a claimed computer programmed in a particular fashion is disclosed by **any computer** simply because a generic computer is capable of being programmed as claimed. Such an analysis would be incorrect. Accordingly, the configuration of the control portion as recited in the current claims is structural in nature, and to reject the claims the references must disclose or render obvious the control portion as **configured in the claims**. As shown below, the references, whether individually or in combination, do not disclose or render obvious a control portion having the claimed configuration. The claims, therefore, are patentable.

C. Rejection of Claims 1 and 3

Claims 1 and 3 stand rejected under 35 U.S.C. §103(a) as being obvious based on the combination of Totterdell, European Patent Application 0 028 067 (Totterdell), and Ohsugi et al., U.S. Patent No. 4,955,213 (Ohsugi). Appellants traverse the rejections for at least the following reasons.

The primary references of Totterdell and Ohsugi, whether individually or in combination, do not disclose or suggest the claim features of a control portion being configured to recognize when said wash cycle is completed, and upon such recognition, to cause said water level detecting unit to detect water level in said water tank only for a prescribed time period substantially equaling a smallest amount of water detectable by said water level detecting unit divided by a minimum flow rate of water fed from said water feed unit.

1. *Totterdell does not teach water level monitoring at the end of the wash cycle for a prescribed time period.*

Totterdell teaches monitoring the water level during the draining operation rather than at the end of the entire wash cycle. (See, e.g., page 2, line 24 to page 3, line 20.) In the passage relied upon by the Examiner in the various Office Actions, Totterdell states: "At the end of the wash/rinse part of the programme, a 'pump-out' signal is applied to controller 10 to energise the drain pump 6." This signal also starts a timer 18 within the controller 10. During this period controller 10 monitors the switch 12 and if the latter does not close during the time period of timer 18, this indicates that the filter is blocked and a register 19 is set." (Page 5, lines 18-24, emphasis added.)

Thus, although there is a reference in Totterdell to monitoring "at the end of the wash/rinse part of the programme", water level monitoring, as described in this passage, is occurring during draining insofar as a "pump-out signal is applied to controller 10 to energise the drain pump 6." Thus, the water level is monitored while the drain pump is energized, *i.e., during draining*. Water level detection does not occur at the end of the entire wash cycle, which would include after draining, but only after the "wash/rinse part of the programme". This differs from the claimed invention in which the residual water level is monitored after even the drain part of the cycle is completed.

In this vein, Totterdell is concerned with detecting a blockage which may prevent appropriate draining. In contrast, the claimed invention is concerned with detecting a leakage from the water feed unit into the drum. Because Totterdell is not concerned with detecting leakage from the water feed unit, it does not teach or suggest monitoring the water level based on a minimum flow rate of the water feed unit. There also is no need in Totterdell to monitor the water level once the draining portion of the cycle is complete to detect a drain blockage.

Based on the above, the controller in Totterdell is not configured as claimed, to

recognize when the wash cycle is completed, and upon such recognition, to cause said water level detecting unit to detect water level in said water tank only for a prescribed time period. Totterdell teaches monitoring the water level only during draining, and therefore water level monitoring is not tied to the end of the wash cycle. In addition, in Totterdell the time period of water level monitoring also is based upon the draining cycle. Totterdell, therefore, does not disclose monitoring the water level for the claimed prescribed time "substantially equaling a smallest amount of water detectable by said water level detecting unit divided by a minimum flow rate of water fed from said water feed unit". The controller of Totterdell, therefore, is not configured in a manner comparable to the claimed control portion.

2. Ohsugi does not make up for the deficiencies of Totterdell

A combination of Totterdell with Ohsugi does not result in or disclose the claimed invention. Ohsugi discloses a conventional auto shutoff that shuts off the power after an arbitrary time after the wash cycle. Accordingly, although a controller in Ohsugi may be able to recognize when the wash cycle is completed, Ohsugi does not disclose or suggest, as claimed, a controller that, upon such recognition, is configured to cause a water level detecting unit to detect water level in the water tank.

Indeed, Ohsugi does not disclose water level detection for the purpose of detecting leakage at the water feed unit. Ohsugi merely teaches water level detection to ensure that the tub is filled to the correct amount during filling. (Ohsugi at col. 3, lines 62-64.) Water level detection thus is not based upon a prescribed ***time period*** as claimed. In addition, the shutoff in Ohsugi occurs an arbitrary time after that wash cycle is complete (e.g. five minutes). The auto shutoff does not activate after a prescribed time, as claimed, substantially equaling a smallest amount of water detectable by a water level detecting unit divided by a minimum flow rate of water fed from a water feed unit.

Accordingly, Totterdell and Ohsugi each lack several features recited in independent claims 1 and 3 (and independent claim 8 as well). In addition, a

combination of Totterdell and Ohsugi does not result in or disclose the claimed invention. Totterdell teaches water level detection during draining, and Ohsugi teaches water level detection during tub filling. The references, therefore, whether individually or in combination, do not disclose or teach a control portion "configured to recognize when said wash cycle is completed, and upon such recognition to cause said water level detecting unit to detect water level in said water tank".

In addition, Totterdell does not teach water level detection for a prescribed time period at all. In Ohsugi water level detection is based on the rising water level in the tub during filling, and not a prescribed time. The references, therefore, whether individually or in combination, do not disclose or teach a controller additionally configured to cause the claimed water level detection for a "prescribed time period". In addition, to the extent Ohsugi teaches that power may be shut off after a set time period after the wash cycle is completed, the time period is arbitrary. Ohsugi does not disclose or suggest water level detection for a "prescribed time period substantially equaling a smallest amount of water detectable by said water level detecting unit divided by a minimum flow rate of water fed from said water feed unit".

Accordingly, for at least these reasons a combination of Totterdell and Ohsugi does not result in, disclose, or suggest the claimed invention of independent claims 1, and 3. Accordingly, the rejections should be withdrawn.

D. Rejection of Claims 5, 8, and 10

Claims 5, 8, and 10 stand rejected pursuant to 35 U.S.C. § 103(a) as being obvious over Totterdell and Ohsugi, and further in view of Dimberger et al., U.S. Patent No. 6,840,553 (Dimberger). Dimberger does not make up for the deficiencies of Totterdell and Ohsugi described above, and the Examiner does not indicate otherwise. Claims 5, 8, and 10, therefore, are patentable for at least the above reasons.

In addition, claims 5, 8, and 10 recite features pertaining to the locking unit. Dimberger allegedly discloses the claimed lock unit (the Examiner citing col. 4 lines 48-

65). Dirnberger states generally that a machine door lock may be blocked when water in the washing machine has reached a level at which opening the door would permit water to escape. Dirnberger, however, does not disclose the additional feature of claims 5, 8, and 10 that the control portion causes the lock unit to lock the door when the leakage detecting unit detects water leakage at the water feed unit. Claims 5, 8, and 10, therefore, are non-obvious for at least these additional reasons, and the rejection of these claims should be withdrawn.

E. Rejection of Claims 6 and 7

Claims 6 and 7 stand rejected pursuant to 35 U.S.C. § 103(a) as being obvious over Totterdell in view of Ohsugi and Dirnberger as applied to claim 5, and further in view of Baubin, U.S. Patent No. 4,696,171 (Baubin) and Nakamura et al., U.S. Patent No. 5,000,015 (Nakamura).). Baubin and Nakamura do not make up for the deficiencies of Totterdell, Ohsugi, and/or Dirnberger described above, and the Examiner does not indicate otherwise. Claims 6 and 7, therefore, are patentable for at least the above reasons.

In addition, claim 6 recites that the locking unit causes the door to remain locked when water leakage is detected, and the drainage unit drains the water from tank. Claim 7 depends from claim 6. The Examiner states that Nakamura discloses a lock detecting unit (col. 13 lines 60-67). The lock detecting unit may detect whether the machine lid is faulty. The Examiner also states that Baubin discloses a pressure switch (level sensor) that indicates an overflow situation and causes water to drain from the wash tub (col. 11 lines 56-67). The Examiner states that it would have been obvious to use a leak detecting unit that detects a high water level that would tell the control portion to drain the water, in combination with a lock detecting unit.

Appellants respectfully disagree. The level sensor of Baubin detects an overflow situation during the wash cycle, as in over filling the tub. It is not at all a "leakage detecting unit [that] detects a water leakage at said water feed unit", as claimed. Overflow detection and leakage detection are not sufficiently comparable to render

claims 6 and 7 obvious. Claims 6 and 7, therefore, are non-obvious for at least these additional reasons, and the rejection of these claims should be withdrawn.

F. Rejection of Claims 11-13

Claims 11-13 stand rejected under 35 U.S.C. §103(a) as being obvious over Totterdell, Ohsugi, and Dimberger as applied to claim 8, and further in view of Nakamura. Nakamura does not make up for the deficiencies of Totterdell, Ohsugi, and/or Dimberger described above, and the Examiner does not indicate otherwise. Claims 11-13, therefore, are patentable for at least the above reasons.

In addition, claims 11 and 12 recites features comparable to those recited in claims 6 and 7. Accordingly, claims 11 and 12 are non-obvious for at least the additional reasons stated in Section G above as to claims 6 and 7, and the rejection of claims 11 and 12 should be withdrawn.

In addition, claim 13 recites that the water level detecting unit detects a water level not lower than a second water level higher than said first water level, to cause said drainage unit to drain off the water in said water tank. Regarding this feature, the Examiner states that Totterdell discloses a plurality of sensors to monitor the water level (page 5 lines 7-25). As is apparent from the disclosure of Totterdell, however, the sensors monitor and control filling and draining during the various components of the wash cycle. The sensors do not, after the completion of the wash cycle, control the draining of water improperly remaining after the wash cycle, as does the control portion recited in claim 13. The other references cited by the Examiner do not make up for this additional deficiency of Totterdell. Accordingly, claim 13 is non-obvious for at least these additional reasons, and the rejection of claim 13 should be withdrawn.

G. Rejection of Claim 14

Claim 14 stands rejected pursuant to 35 U.S.C. § 103(a) as being obvious over Totterdell, Ohsugi, Dimberger, and Nakamura, and further in view of Kronbetter et al., U.S. Patent No. 6,256,823 (Kronbetter). Claim 14 depends from claim 13, and

therefore is patentable for at least the same reasons (including reasons stated as to base claim 8.) Kronbetter does not make up for the deficiencies of the other references described above, and the Examiner does not indicate otherwise. The rejection of claim 14, therefore, should be withdrawn.

H. Conclusion

For at least these reasons, claims 1, 3, 5-8, and 10-14 are not obvious in view of the references cited by the Examiner, whether such references are considered individually or in any combination thereof. Accordingly, Appellants respectfully request reversal of the Examiner's rejections of claims 1, 3, 5-8, and 10-14.

VII. Claims Appendix

An appendix containing a copy of the claims involved in this appeal is attached to this brief.

IX. Evidence Appendix

An evidence appendix is attached, but identifies no items of evidence.

X. Related Proceedings Appendix

A related proceedings appendix is attached, but identifies no decisions.

Respectfully submitted,

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CLAIMS APPENDIX

1. A washing machine, including a drum having an axis of rotation in a direction crossing a vertical direction and a water tank surrounding said drum, comprising:

a water level detecting unit detecting level of water in said water tank;

a water feed unit for feeding water to said water tank; and

a control portion operating said washing machine for performing a wash cycle including washing, rinsing, and draining;

said control portion being configured to recognize when said wash cycle is completed and upon such recognition, to cause said water level detecting unit to detect water level in said water tank only for a prescribed time period substantially equaling a smallest amount of water detectable by said water level detecting unit divided by a minimum flow rate of water fed from said water feed, and thereafter power supply to said control portion is turned off.

3. A washing machine, including a drum having an axis of rotation in a direction crossing a vertical direction and a water tank surrounding said drum; wherein said water tank has an opening in a plane crossing said axis of rotation; said washing machine comprising:

a door opening and closing said opening of said water tank;

a water leakage detecting unit monitoring water leakage at said water feed unit and detecting the water level in said water tank; and

a control portion operating said washing machine for performing a wash cycle including washing, rinsing, and draining;

said control portion being configured to recognize when said wash cycle is completed and upon such recognition to cause said leakage detecting unit to monitor water leakage at said water feed unit only for a prescribed time period substantially equaling a smallest amount of water detectable by said water level detecting unit

divided by a minimum flow rate of water fed from said water feed unit, and thereafter power supply to said control portion is turned off.

5. The washing machine according to claim 3, further comprising
a lock unit for preventing opening of said door;
said control portion being further configured to cause said lock unit to lock said door when said leakage detecting unit detects water leakage at said water feed unit.

6. The washing machine according to claim 5, further comprising:
a drainage unit draining water in said water tank; and
a lock detecting unit detecting whether said door is locked by said lock unit or not; wherein

when said water leakage detecting unit detects a water leakage at said water feed unit, said lock unit is activated not to open said door and said lock detecting unit detects that said door is not locked, said control portion being further configured to cause said drainage unit to drain off the water in said water tank.

7. The washing machine according to claim 6,
said control portion being further configured, when said lock unit is caused to lock said door and said lock detecting unit detects that said door is not locked, to notify that said door is not locked.

8. A washing machine including a drum having an axis of rotation in a direction crossing a vertical direction and a water tank surrounding said drum; wherein
said water tank has an opening in a plane crossing said axis of rotation;
said washing machine comprising:
a water level detecting unit detecting water level in said water tank;
a lock unit for locking said door;
a water feed unit for feeding water to said water tank; and

a control portion operating said washing machine for performing a wash cycle including washing, rinsing, and draining;

said control portion being configured to recognize when said wash cycle is completed, and upon such recognition to cause said water level detecting unit to detect water level in said water tank only for a prescribed time period substantially equaling at least a smallest amount of water detectable by said water level detecting unit divided by a minimum flow rate of water fed from said water feed unit, and when said water level detecting unit detects a water level not lower than a first water level as said lowest water level detectable by said water level detecting unit, causes said lock unit to lock said door, and when said water level detecting unit does not detect a water level not lower than said first water level, power supply to said control portion is turned off.

10. The washing machine according to claim 8,
said control portion being further configured, when said wash cycle is completed, to cause said lock unit to unlock said door.

11. The washing machine according to claim 8, further comprising:
a drainage unit draining water in said water tank; and
a lock detecting unit detecting whether said door is locked by said lock unit or not; wherein
when said water level detecting unit detects a water level not lower than said first water level after the completion of said operation for washing and said lock detecting unit detects that said door is not locked by said lock unit, said control portion being further configured to cause said drainage unit to drain off the water in said water tank.

12. The washing machine according to claim 11,
said control portion being further configured, when said lock unit is caused to lock said door and said lock detecting unit detects that said door is not locked, to notify that said door is not locked.

13. The washing machine according to claim 8, further comprising a drainage unit for draining off the water in said water tank; said control portion being further configured, after completion of said wash cycle, when said water level detecting unit detects a water level not lower than a second water level higher than said first water level, to cause said drainage unit to drain off the water in said water tank.

14. The washing machine according to claim 13, wherein said second water level is positioned lower than a lowermost plane of said opening of said water tank.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.